

VERSION WITH MARKINGS TO SHOW CHANGES MADE:

Claims 1-4, 19, 25-28, 43-44, and 78 have been amended as follows:

1. (Amended) A method of developing a three-dimensional tomographic mammography image of a breast, the method comprising:

- (a) providing a device for performing [cone beam] volume tomography imaging, the device comprising a [cone-beam] radiation source and a flat panel detector;
- (b) disposing the breast in a path of [cone-beam] radiation between the source and the detector;
- (c) using the device to obtain a volume scan of the breast, the volume scan resulting in image signals; and
- (d) forming the three-dimensional tomographic mammography image from the image signals.

2. (Amended) The method of claim [1] 81, wherein the volume scan is performed with a spatial resolution greater than 1 lp/mm.

3. (Amended) The method of claim [1] 81, wherein the volume scan is a single fast volume scan.

4. (Amended) The method of claim [1] 81, wherein step (c) comprises moving the cone-beam radiation source and the flat panel detector to define a data acquisition geometry.

19. (Amended) The method of claim [1] 81, wherein step (d) comprises multi-resolution volume tomographic reconstruction from a single set of projection images.

25. (Amended) A device for producing a three-dimensional tomographic mammography image of a breast of a patient, the device comprising:

- a gantry frame;
- at least one motor for moving the gantry frame to form a data acquisition geometry;
- a source of [cone-beam] radiation attached to the gantry frame to move with the gantry frame;
- a flat panel detector attached to the gantry frame to move with the gantry frame, the flat panel detector being disposed in a path of the [cone-beam] radiation; and
- a support on which the patient rests while the cone beam mammography projection images are taken, the support supporting the patient such that the breast is disposed between the source of [cone-beam] radiation and the flat panel detector;

wherein the at least one motor moves the gantry frame so that the flat panel detector takes a volume scan of the breast.

26. (Amended) The device of claim [25] 82, wherein the volume scan is performed with a resolution greater than 1 lp/mm.

27. (Amended) The device of claim [25] 82, wherein the volume scan is a single fast volume scan.

28. (Amended) The device of claim [25] 82, wherein the at least one motor comprises a motor for moving the cone-beam radiation source and the flat panel detector to define a data acquisition geometry.

43. (Amended) The device of claim 25, wherein the support comprises a table on which the patient lies while the [cone beam] mammography projection images are taken.

44. (Amended) The device of claim 43, wherein the support further comprises a breast holder for holding the breast in the path of the [cone-beam] radiation.

78. (Amended) The device of claim 77, wherein the controller dynamically changes an exposure level of the [cone-beam] radiation.